

TECHNICAL MEMORANDUM

TO: Rafael Casanova, PG, U.S. Environmental Protection Agency (EPA) Region VI Task Order Manager

FROM: Brian Yost, EA Engineering, Science and Technology, Inc. PBC (EA) Project Manager

CC: Tim Startz, EA; Cristina Radu, EA

DATE: 24 February 2015

SUBJECT: Evaluation of Response to Comments A, B, and H, Brine Cooperating Parties Remedial Investigation (RI) Report for the Brine Service Company Superfund Site

On 21 February 2015, EA received from the U.S. Environmental Protection Agency (EPA) a request to comment on partial responses provided by the Potentially Responsible Parties (PRPs) to EPA comments A, B, and H on the Remedial Investigation (RI) report. These responses were provided to facilitate the 26 February 2015 agency meeting to discuss the RI report. Below, we are providing our professional opinion on these responses.

Comment A: Interpretation of the Vertical and Horizontal Extent of the Upper Transmissive Unit (UTU). The response focuses on a limited portion of Comment A, strictly the portion regarding the statement that water elevation data provided in the Draft RI Report does not definitively show that the UTU is not in communication with the East Ditch in the vicinity of the South Pit. Our professional opinion is that the RI report is lacking in creating a defensible “big picture” of the hydrogeological regime, including the vertical and horizontal extent of the UTU, as listed in the bullets that precede the paragraph on which the respondent is focusing this partial response. As such, the gauging data should be viewed in context rather than separate. The various components of the conceptual site model, such as type of waste disposed of, location/delineation of waste, understanding of the subsurface conditions, fluctuation of the groundwater direction, and other factors are important in understanding contaminant migration and transport. As such, seasonal data are necessary to make definitive statements pertaining to groundwater direction, fluctuations and possible communication with surface waters. The relevance of the annual precipitation data provided in graphic format and an evaluation of the wet/dry year is unclear in drawing opinions on these. As per the response to Comment B, 1 October 2009 to 30 September 2010 was the wettest year with 52.33 inches of rainfall recorded at Corpus Christi Airport which further indicates conditions that should not be used to extrapolate site conditions. The original comment was indicating that based on the data provided, ground water level fluctuations throughout a year and thus potential changes in the direction of groundwater flow could not be assessed.

Comment B: Class 2 and Unconfined Aquifer Designation for the UTU

Partial Agency Comment states that the EPA believes that the applicable groundwater classification for the UTU at the Site is Class 2 instead of Class 3.

This comment was not among those provided by EA to EPA. EA indicated in our comments that the planning documents and the RI report were inconsistent in utilizing screening criteria. Section A.6.5.2, Specify the Action Level for the Decision, of the August 2010 Quality Assurance Project Plan (QAPP) for the RI states that: “Groundwater concentrations will also be compared to the Class 3 ($^{GW}_{Class3}$) adjusted for a 10^{-6} carcinogenic risk to evaluate need to protect the groundwater.” This also agrees with Section A.6.1.2 of the same QAPP, Describe the Conceptual Site Model, which states the following: (1) “groundwater at adjacent facilities (Citgo, Flint Hills, and the former Goldston Corporation Yard), was considered a Class 3 (non-potable)” and (2) “the shallow groundwater-bearing unit at Flint Hills, Citgo and

the LPST Site 95542 adjacent to the Site was classified as a Class 3 groundwater source by the TCEQ.” However, Tables 1 through 4 of the same QAPP present analyte lists and associated screening levels derived from drinking-water use such as Tap Water Regional Screening levels and Maximum Contaminant Levels in addition to the Texas Risk Reduction Program Class 3 values. The QAPP tables and text along with subsequent technical documents that evaluate site data (such as the 2011 Technical Memorandum and the 2014 RI report) do not present a clear understanding of the screening levels to be used. .

Overall inconsistencies of screening criteria between planning documents and reports created difficulties for EA in evaluating the pertinence of exceedances and RI conclusions.

Comment H: Executive Summary – Waste Materials (Page iii)

The comment requires amendment of the sections describing the extent of waste in the pits. This is not a general comment provided by EA and only part of it is supported by specific comments we provided. Due to the timeframe available for evaluation of responses, EA was unable to perform a complete review of each comment and response, thus we are providing general thoughts for your consideration.

EA made several comments regarding issues on how the waste determination criteria stated were applied to information documented in borehole logs resulting in waste delineation with which we did not agree. We did not associate the presence of semivolatile or volatile organic compounds (as per the comment) or the exceedances of screening levels and high photoionization detector measurements (as per the PRP response) with the presence of waste. Contamination can exist in soil at significant levels (even exceeding project-specific criteria) but be a result of migration of contamination from waste into the soil rather than be indicative of actual waste. For this reason, we focused our review of the waste delineation on the information contained in the borehole logs, where the descriptions, if appropriately detailed, should be clear if the medium was waste or not. As the waste disposed was liquid and sludge, criteria for determining what is considered waste and what not should be discussed and agreed upon by all involved parties such that a revision of waste delineation section can be completed and included in a revised RI report.

The response makes some references to background polycyclic aromatic hydrocarbons concentrations utilized by the Agency for Toxic Substances and Disease Registry, the 95% percentile concentration in soil in Chicago, and the 95% percentile concentration developed by the Massachusetts Department of Environmental Protection. It should be noted that two documents are cited but not included in the reference list. We have not been able to assess the relevance of these background studies to the project area. It is also noted that the respondents make generalized statements at these studies show that background concentrations of PAHs have been shown to be up to a certain amount. This seems to indicate that any PAH may have a background concentration up to that amount. Anthropogenic background concentrations have been established for several individual PAHs. These should be evaluated as such and not generalized as in the responses.

It is our opinion that performing an appropriate local background study for an RI of this magnitude is not excessive; a local study could be used to support the decision to dismiss contamination as originating at the site. It is acknowledged that the conditions at the site are complicated due to the presence of non-native soil, because fill was placed on top of the waste.

Lastly, the response claims that the presence of contamination is the result of lateral migration; however, the response is not well substantiated by an argument based on local conditions/lithology that would support said lateral transport.

Overall, clear Data Quality Objectives formulated such that they address the different interpretations of the interested parties and are agreed-upon by all should support of the decision-making process so that the conclusions of report are not divergent. This would include a revision of the screening criteria based on

which risk screening is performed. As the screening criteria in the QAPP were not applied consistently during the staged investigations, the decisions of additional sampling that were made based on criteria exceedances may have to be revisited.